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# Campus Report Feb 21, 2007

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# University of Dayton, Ohio (url: <http://www.udayton.edu/index.php>)



## Campus Report Feb 21, 2007

02.21.2007 | Science, Campus and Community, Research

The University of Dayton Research Institute has opened what researchers believe to be the world's first manufacturing center for product demonstration of nano-enhanced polymer composites. Created in collaboration with the National Composite Center in Dayton, where it is located, the Center for Multifunctional Polymer Nanocomposites and Devices will allow manufacturers to try out nanotechnology for use in their composite products — but without the major investment dollars and risk involved in purchasing new equipment and retooling their facilities.

"To introduce a new technology into their products, manufacturers have to either convert existing equipment, or find space in their plants and buy new equipment," said Richard Garozzo, UDRI composites engineer and plant manager of the Center for Multifunctional Polymer Nanocomposites and Devices. "Either way, it involves a lot of upfront expense for technology that may or may not ultimately fit their needs. Instead, we're giving them the opportunity to evaluate state-of-the-art materials without a lot of investment. Then, if they are satisfied with the results and decide these new nano-enhanced polymers make sense for their products, they can transition the technology to their companies."

In addition to materials testing, services offered at Center for Multifunctional Polymer Nanocomposites and Devices include prototype development and small production runs. Prototypes and limited-quantity production are normally expensive endeavors, but can be done far more affordably at the facility, which features a 10-foot autoclave, a 440-ton injection molding machine, a laser profiler and other equipment, in addition to lab and office space.

UDRI staff can also help manufacturers reduce the transition time of new materials to the marketplace, a process that normally can take years — or even decades, Garozzo said. "We're giving businesses access to our facility, our technologies and our resources. And because we're probably the foremost authority on nanomaterials processing in the world, they will also benefit from our expertise.

"We will also partner with the National Institute for Occupational Safety and Health to ensure all the manufacturing is conducted safely, smoothing the transition to the industry workplace," he added.

Researchers say the new facility will be a boon to polymers — Ohio's largest industry — and help stimulate the manufacturing of these new materials in the state. The commercialization of polymer nanotechnology will help Ohio maintain and even strengthen its competitive edge in polymers, reducing the outsourcing of polymer processing and manufacturing jobs to competitors overseas.

UDRI's Center for Multifunctional Polymer Nanocomposites and Devices is part of a larger program funded by Ohio's Third Frontier Project. Other partners in the umbrella program are Ohio State University, working in the area of biosensors, and the University of Akron, working in polymer photonics. It is one of a number of state-funded programs for new technologies designed to position Ohio as a world-class center of nanotechnology, giving existing businesses a manufacturing edge, fostering new business and creating high-wage jobs.